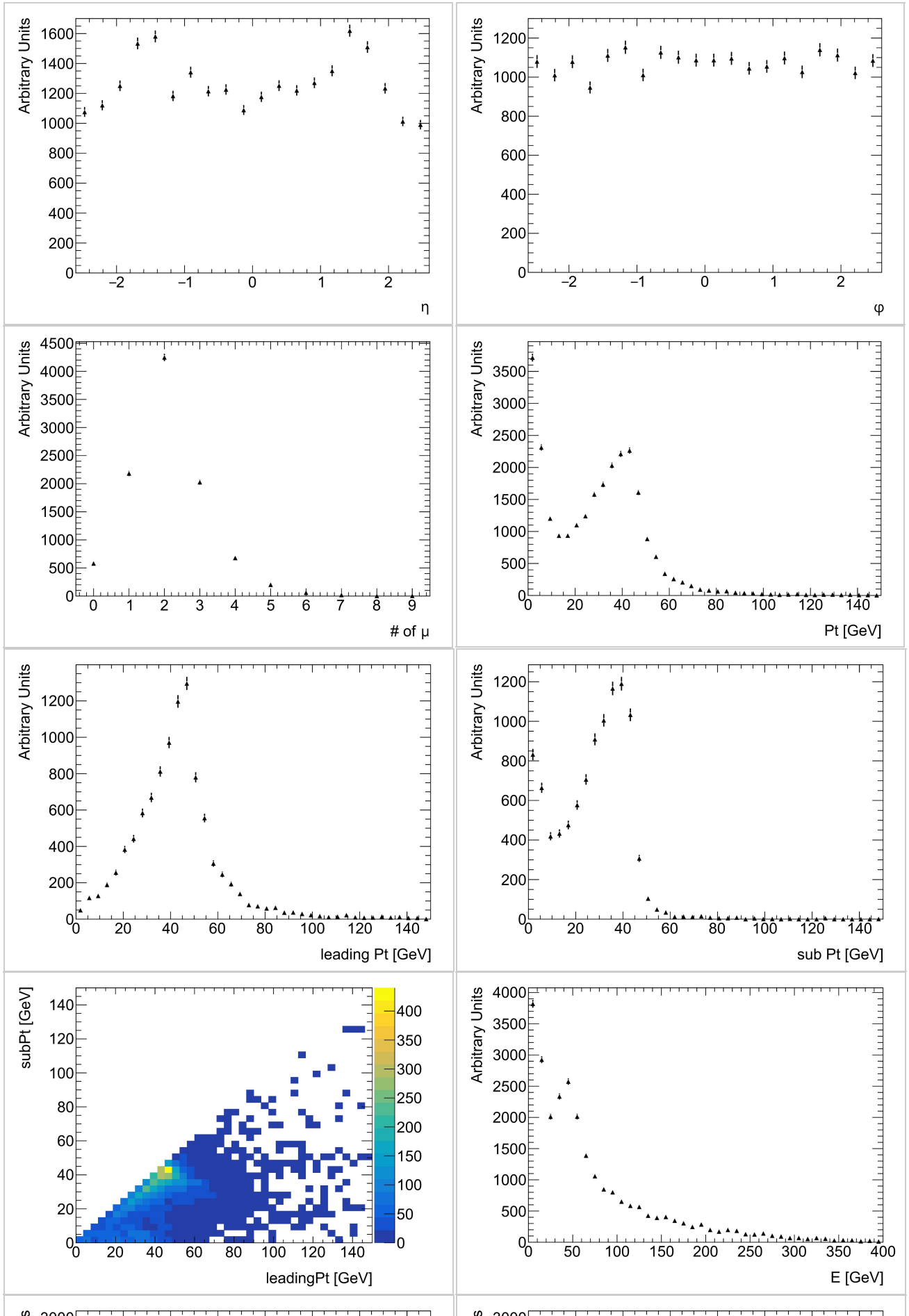
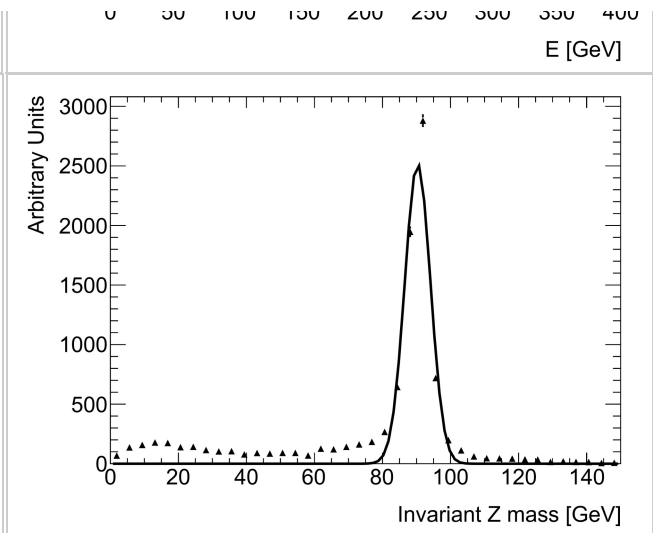
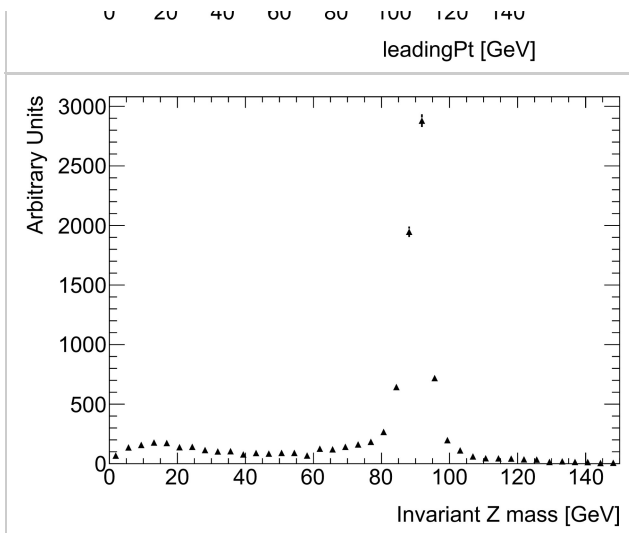


# Plots final

fredag 12. juni 2020 12:23

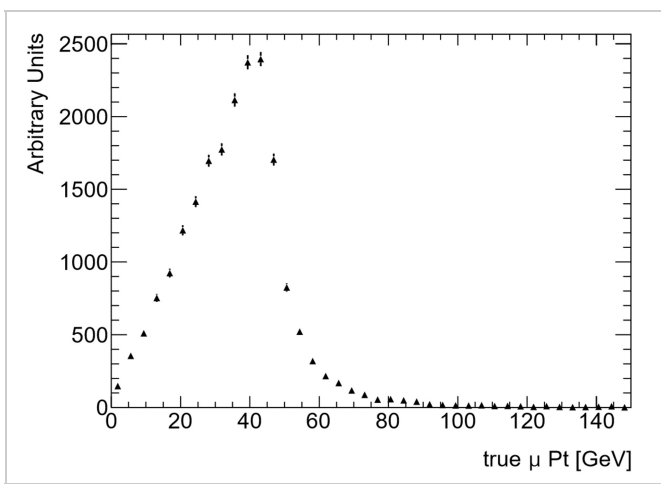
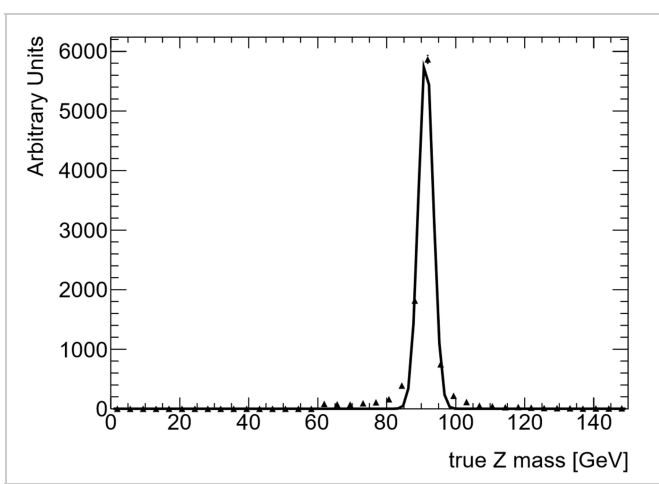
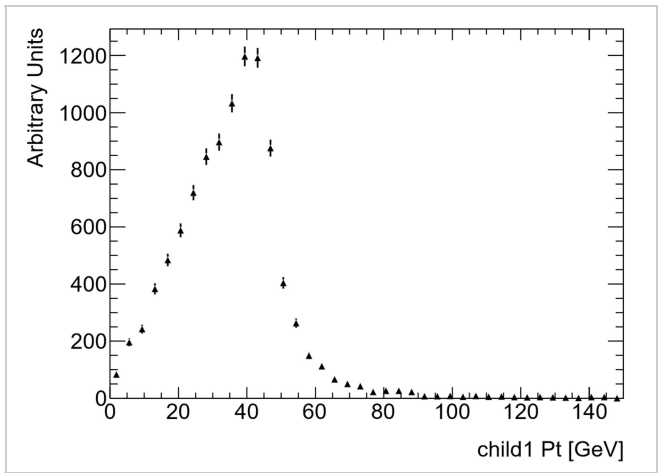
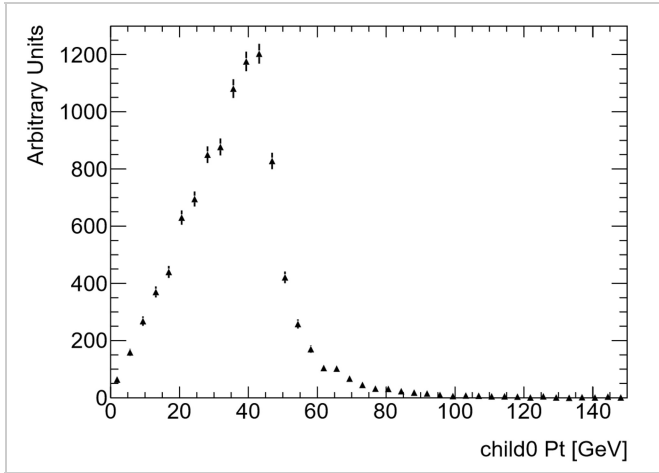




```

root [0]
Processing PlotTest.C...
FCN=3325.5 FROM MIGRAD   STATUS=CONVERGED   217 CALLS   218 TOTAL
EDM=1.00575e-10   STRATEGY= 1   ERROR MATRIX UNCERTAINTY   1.8 per cent
EXT PARAMETER
NO.  NAME      VALUE      ERROR      STEP      FIRST
1  Constant  2.51746e+03  5.00272e+01  1.65282e-01 -2.13759e-07
2  Mean      9.03220e+01  4.93926e-02  1.29757e-04  3.23673e-04
3  Sigma     3.77031e+00  5.81200e-02  -2.79717e-06  2.69146e-03
root [1]

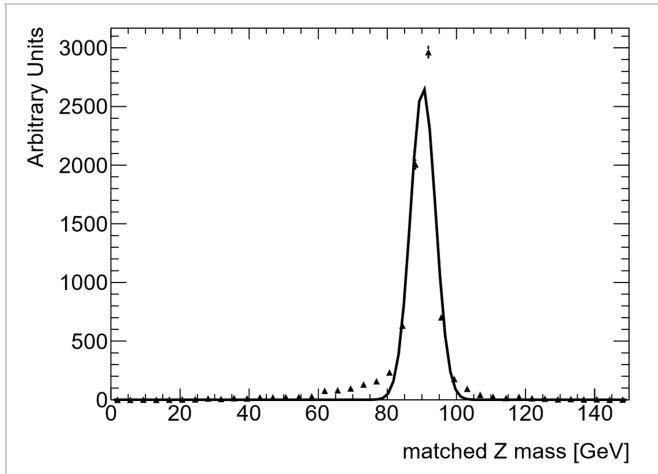
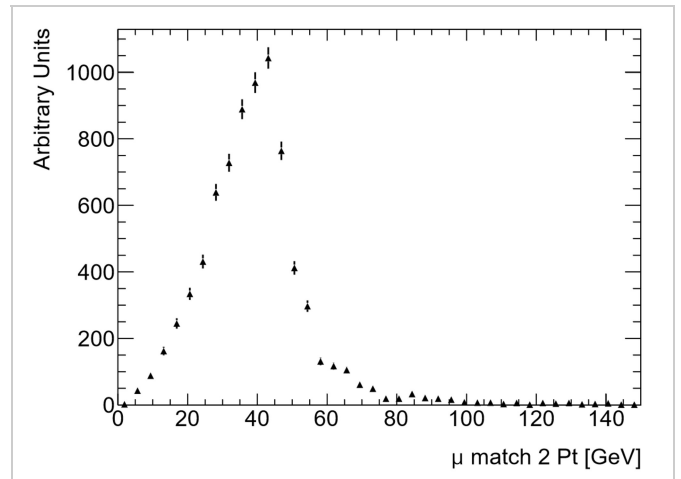
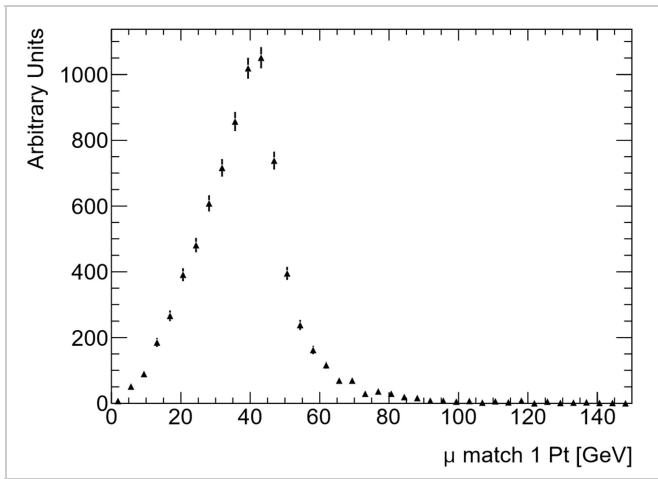
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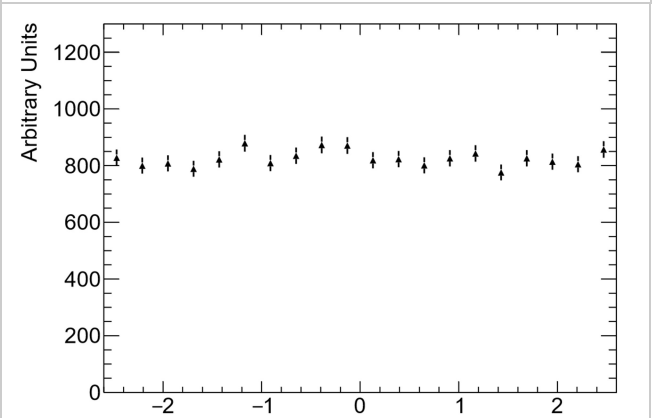
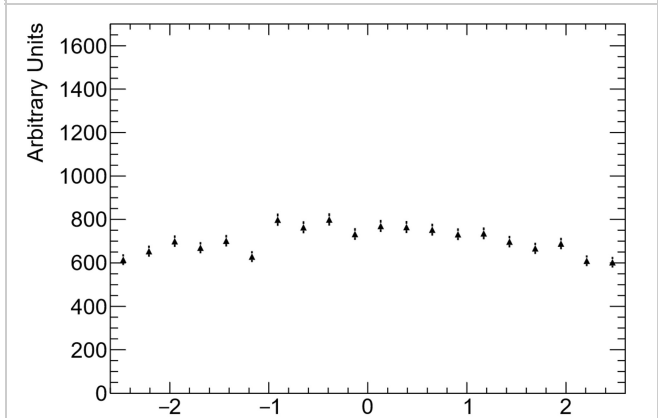
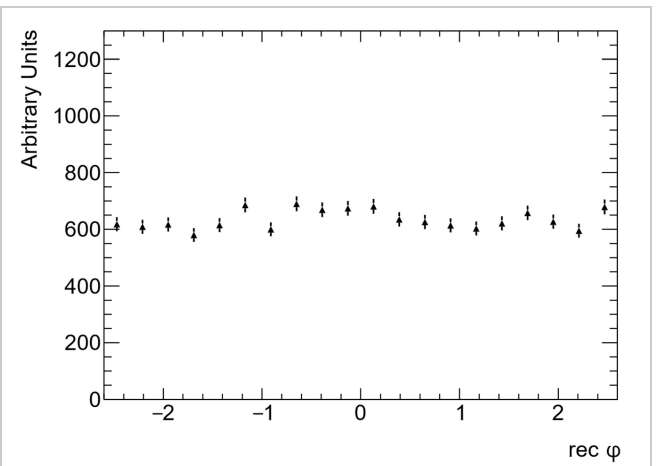
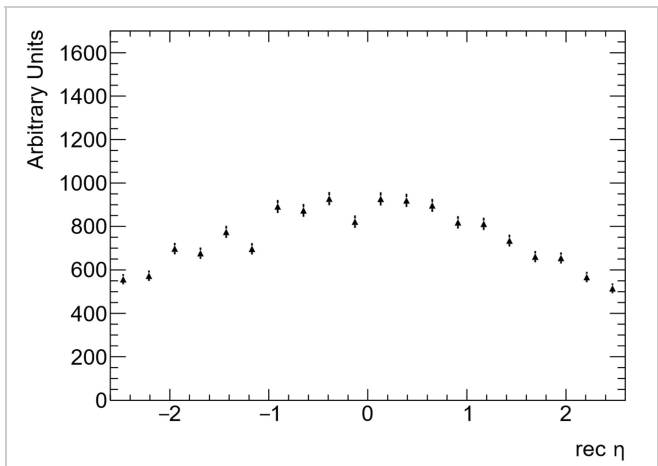
FCN=1469.74 FROM MIGRAD   STATUS=CONVERGED   118 CALLS   119 TOTAL
EDM=3.26667e-09   STRATEGY= 1   ERROR MATRIX UNCERTAINTY   2.3 per cent
EXT PARAMETER
NO.  NAME      VALUE      ERROR      STEP      FIRST
1  Constant  5.95628e+03  8.18609e+01 -1.67339e-01 -1.25400e-06
2  Mean      9.13432e+01  2.34497e-02  7.56364e-06  9.61737e-04
3  Sigma     2.12681e+00  1.84610e-02  2.22128e-06  3.16153e-03

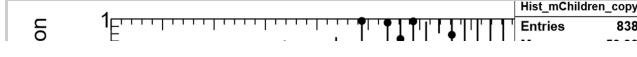
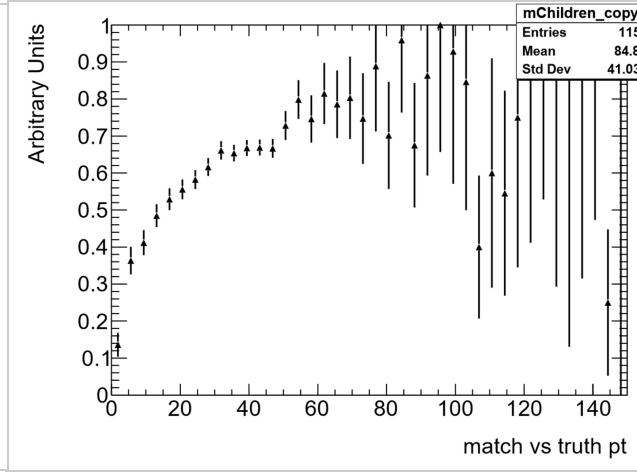
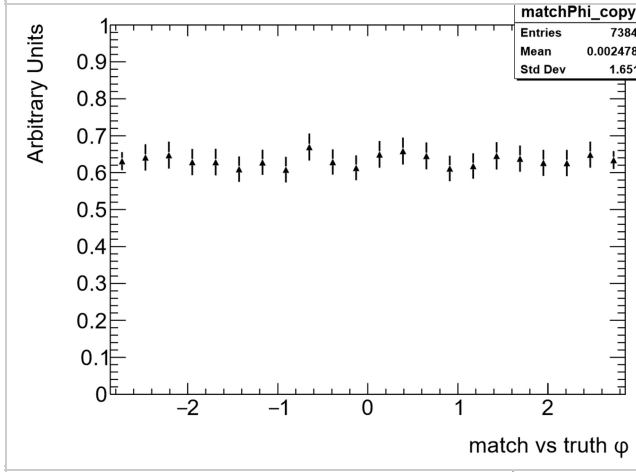
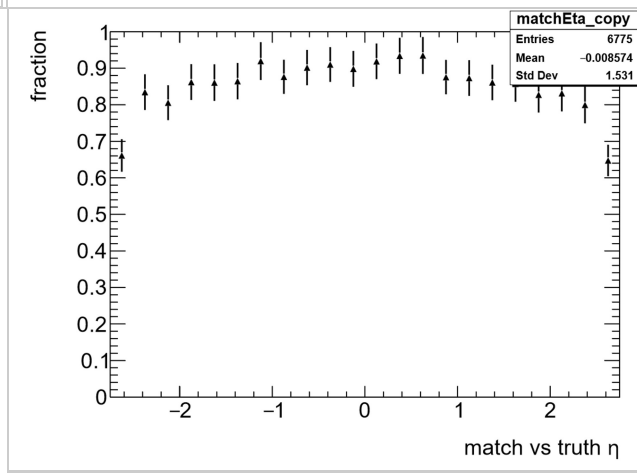
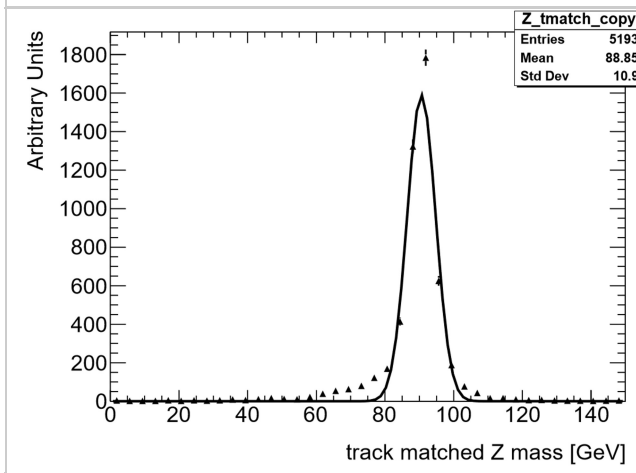
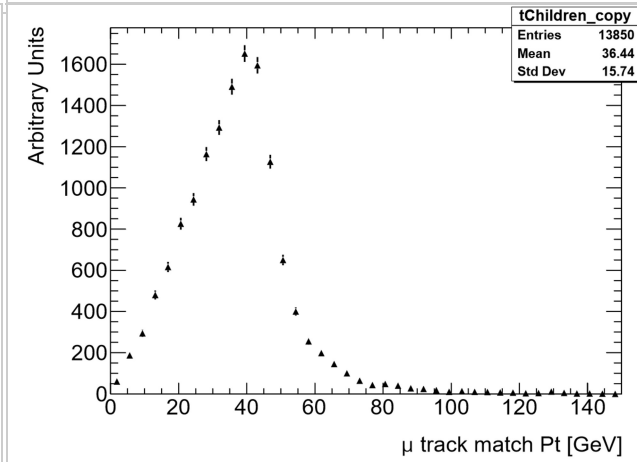
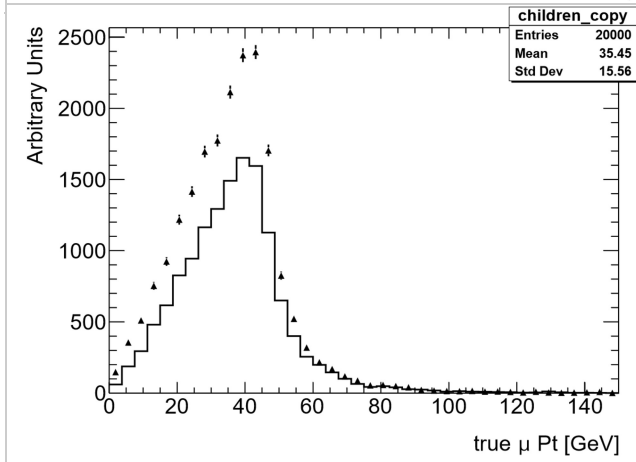
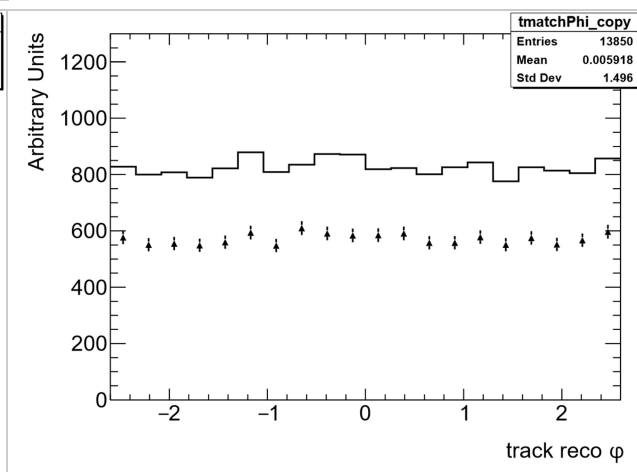
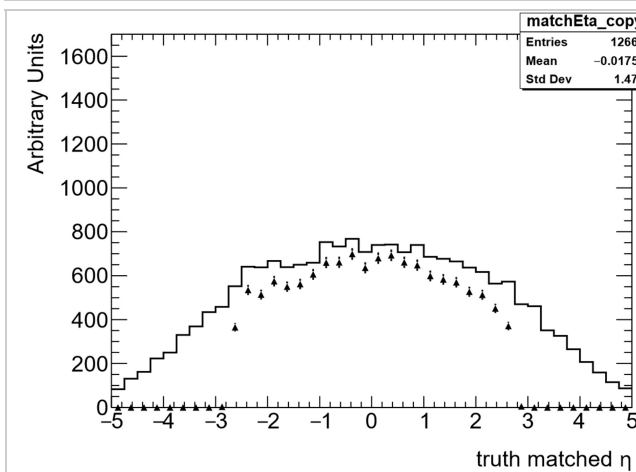
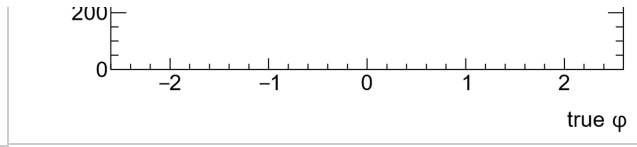
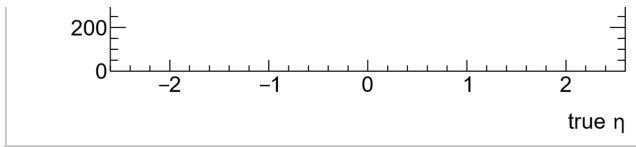
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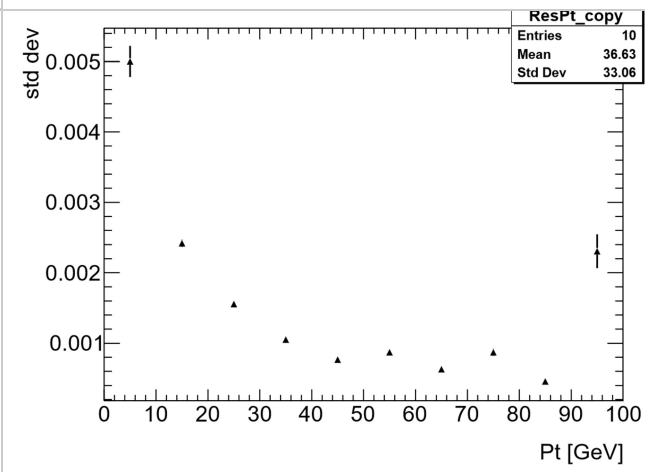
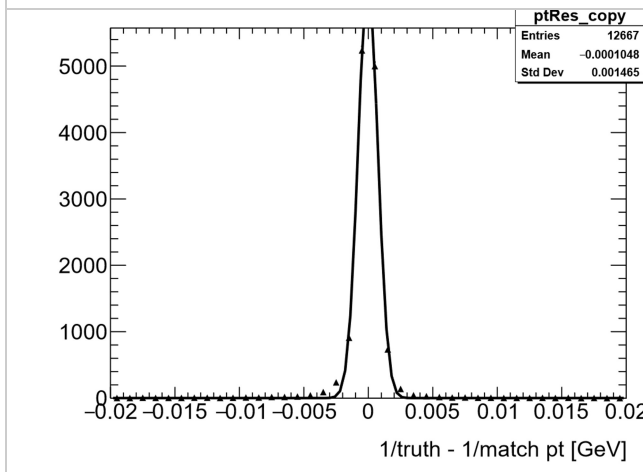
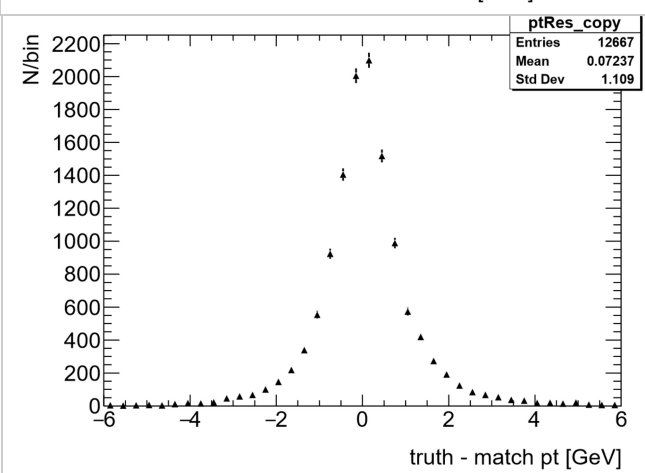
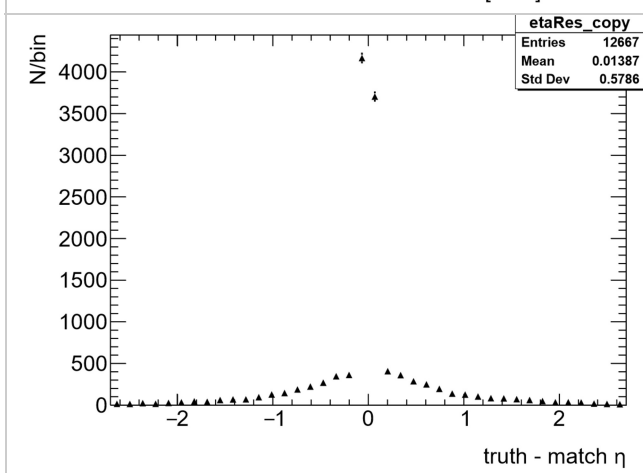
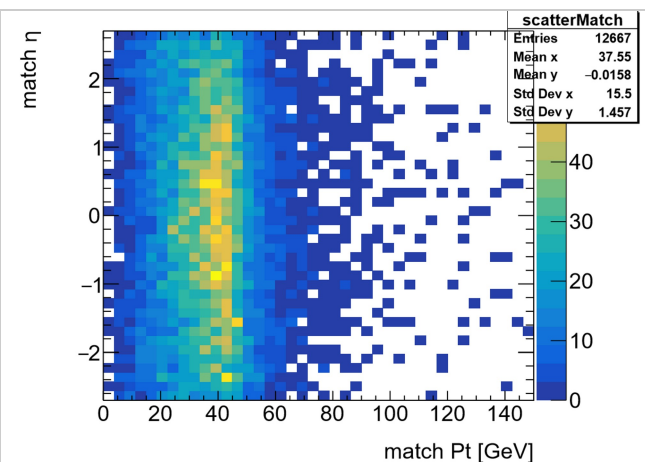
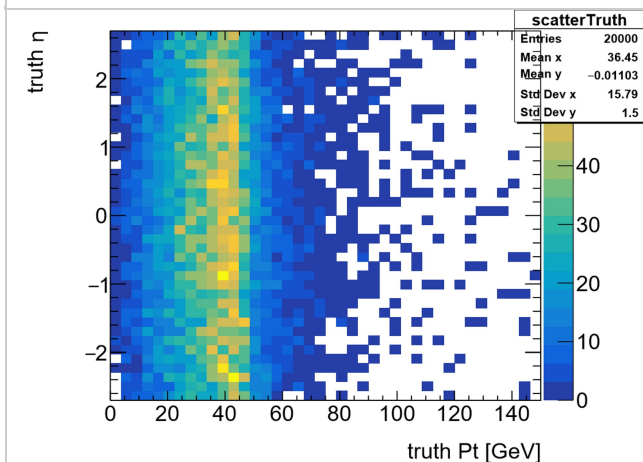
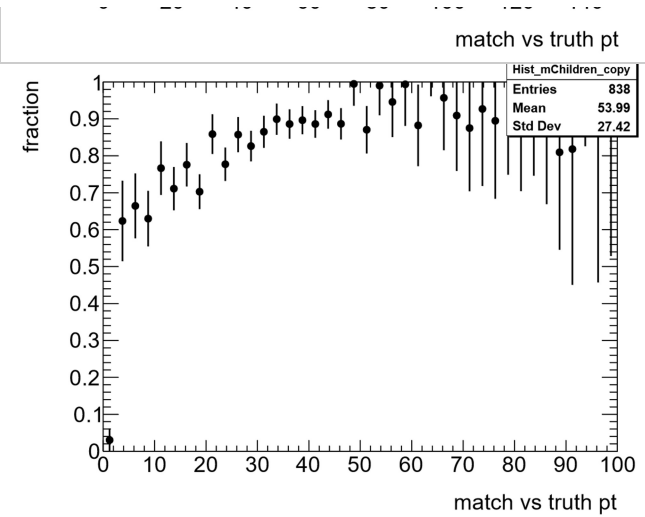
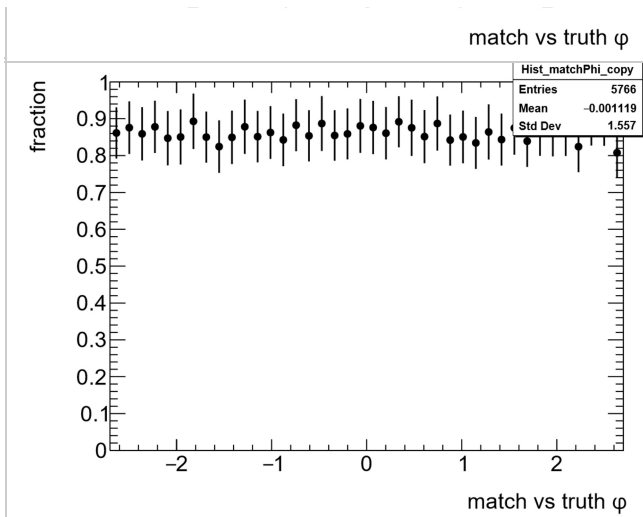


```

FCN=1249.64 FROM MIGRAD  STATUS=CONVERGED  121 CALLS  122 TOTAL
EDM=3.83606e-08  STRATEGY= 1  ERROR MATRIX UNCERTAINTY  2.1 per cent
EXT PARAMETER
NO.  NAME      VALUE      ERROR      STEP      SIZE      DERIVATIVE
1  Constant  2.66219e+03  5.08420e+01  1.57397e-01  4.51097e-06
2  Mean      9.03317e+01  4.67304e-02  -1.42042e-04  -6.68188e-03
3  Sigma     3.60515e+00  5.23831e-02  -2.65388e-06  -1.74850e-02
  
```



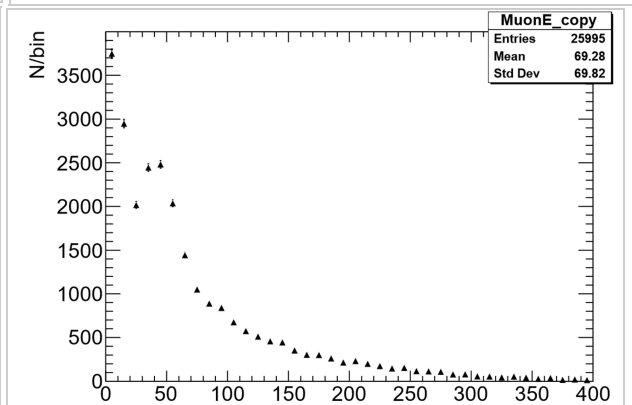
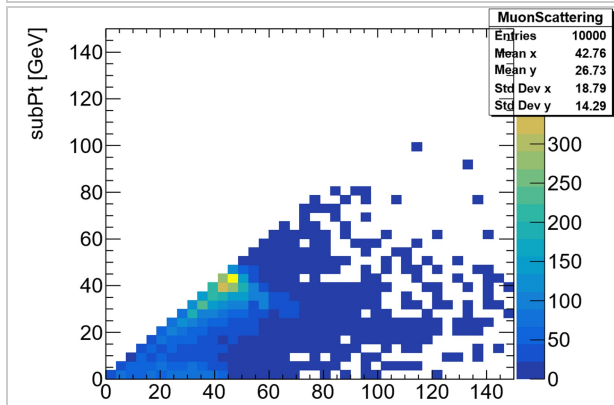
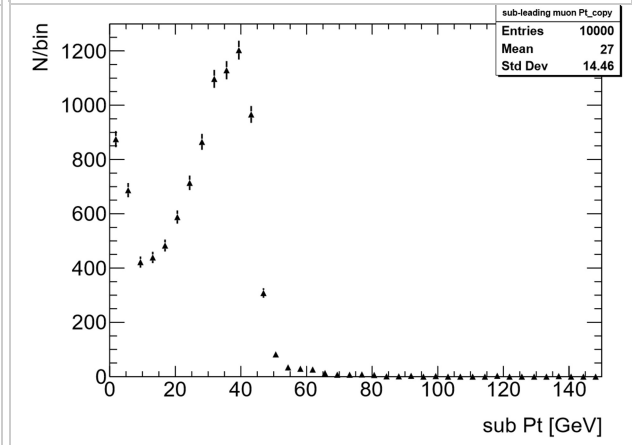
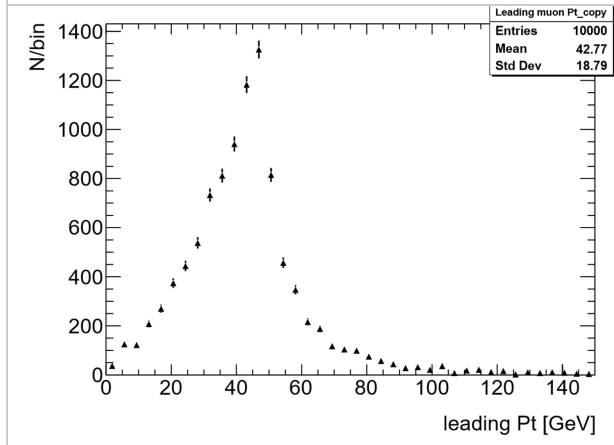
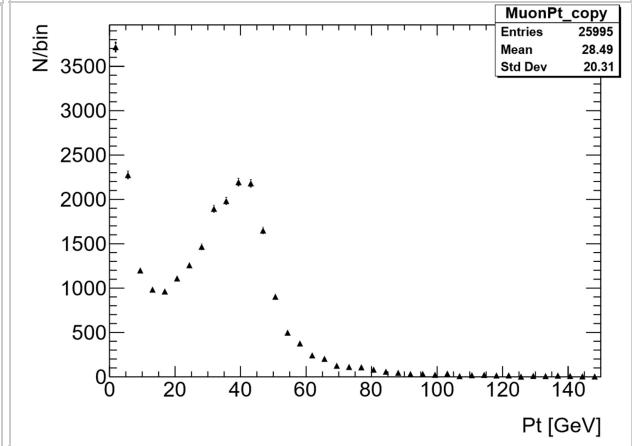
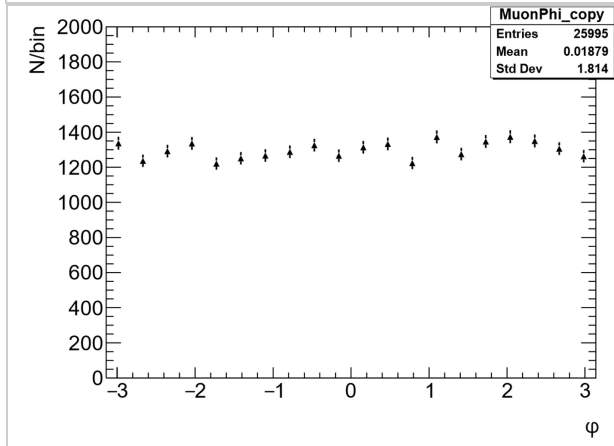
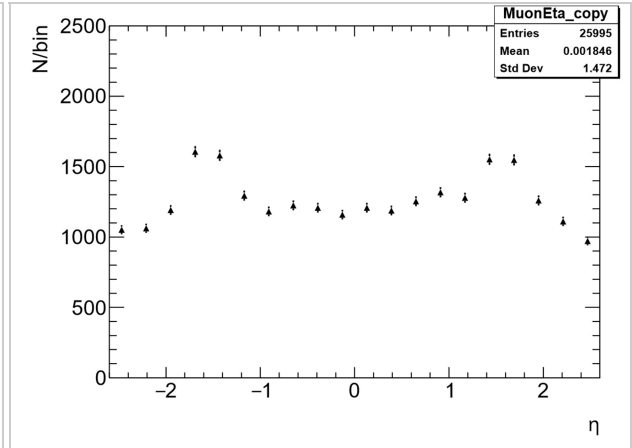
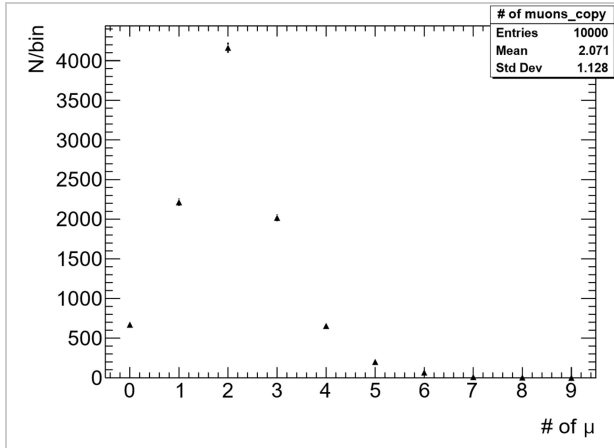


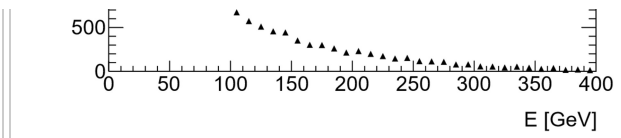
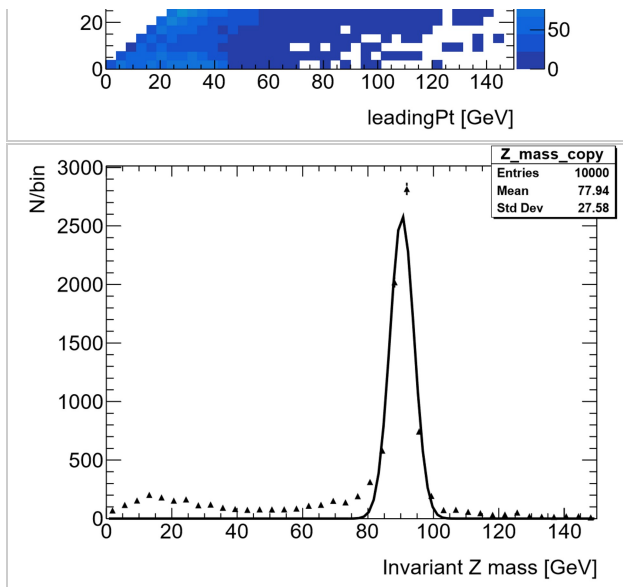


Test of background samples:

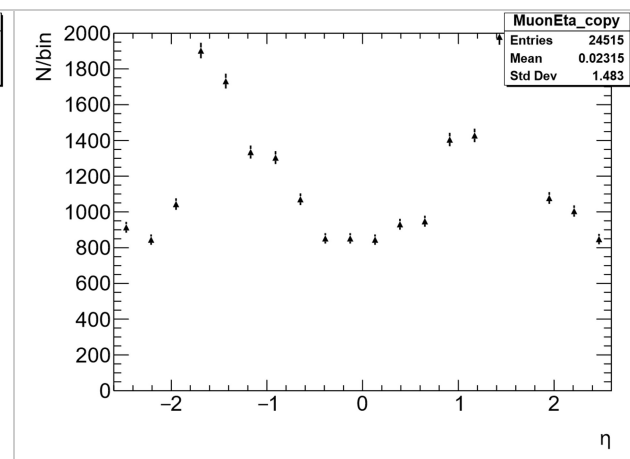
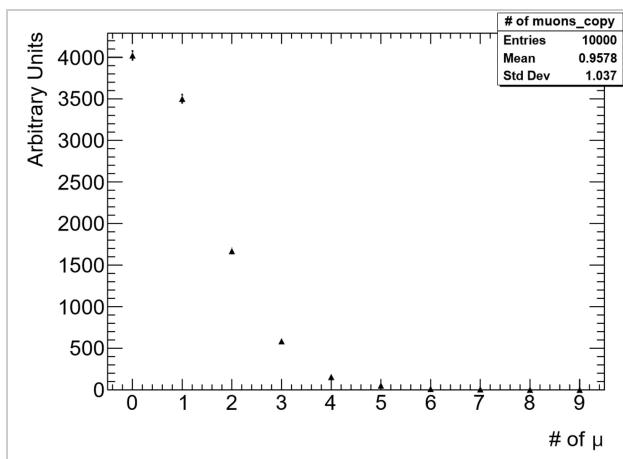
Original:

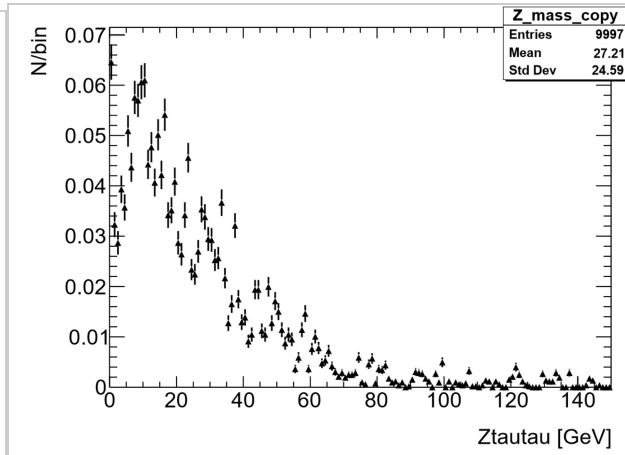
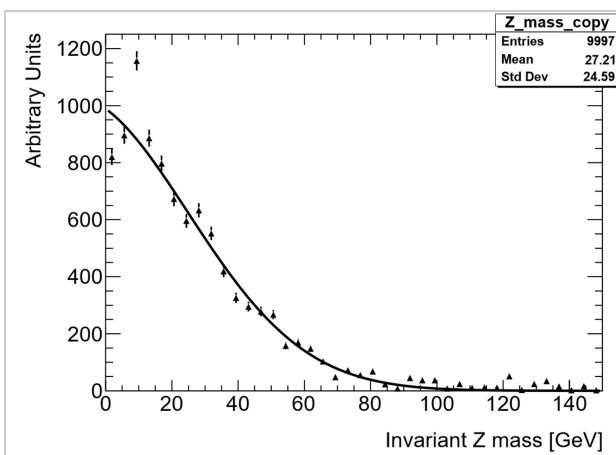
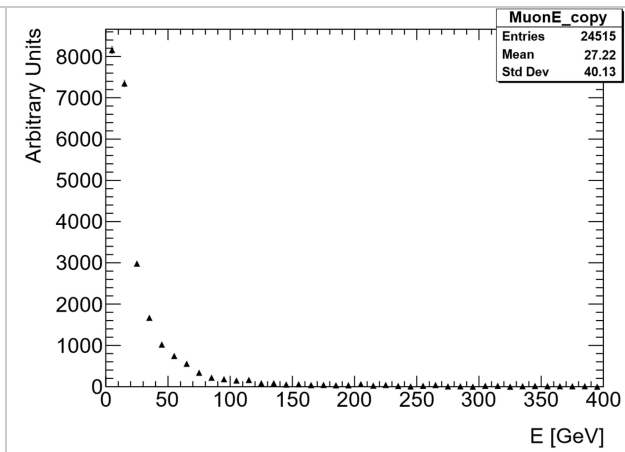
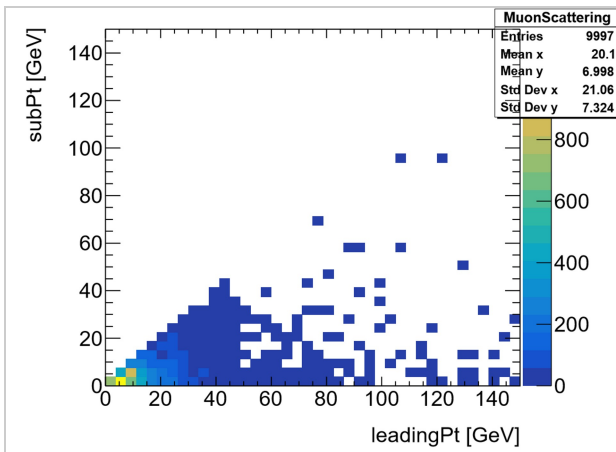
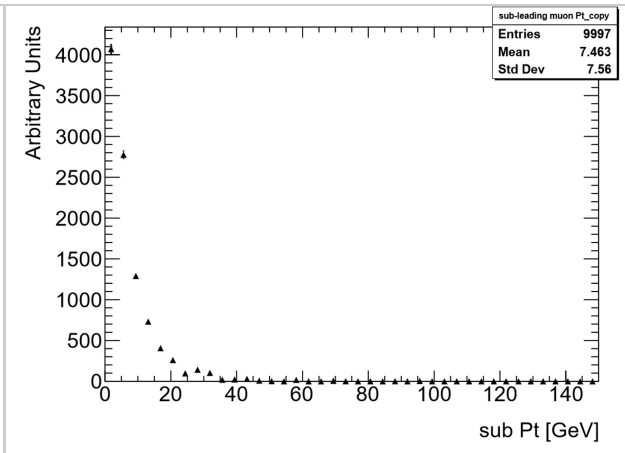
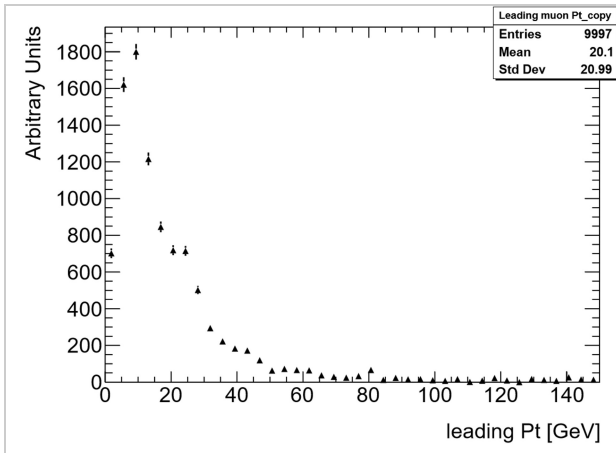
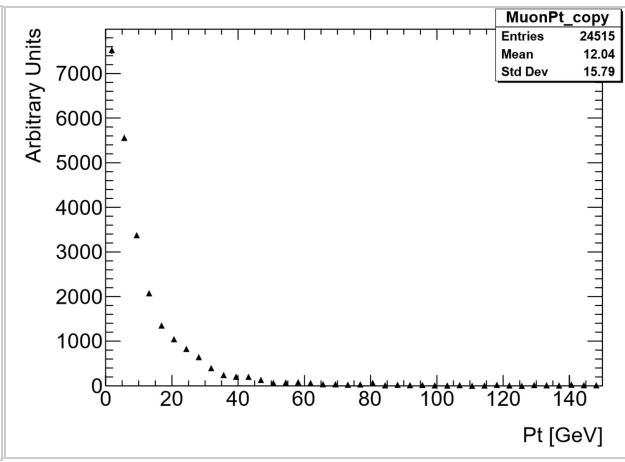
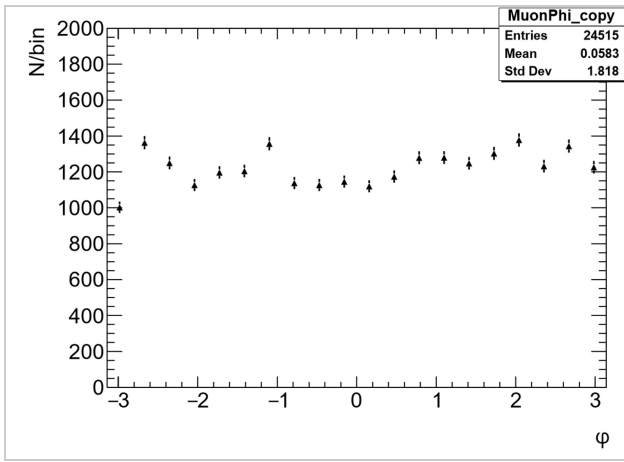
Cross section 1,9 nb





Z- tau tau  
Cross section 1,9 nb





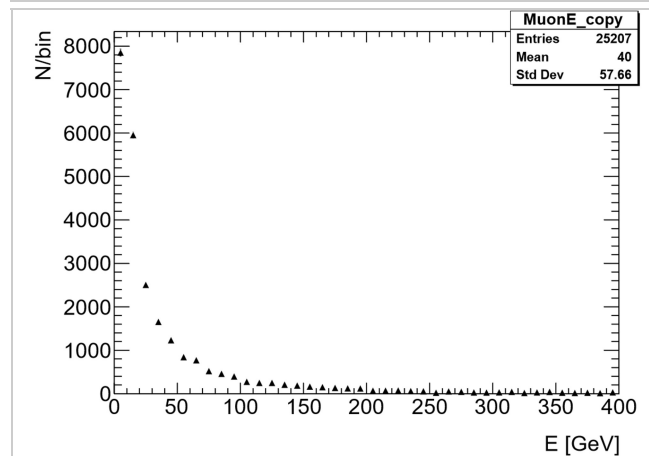
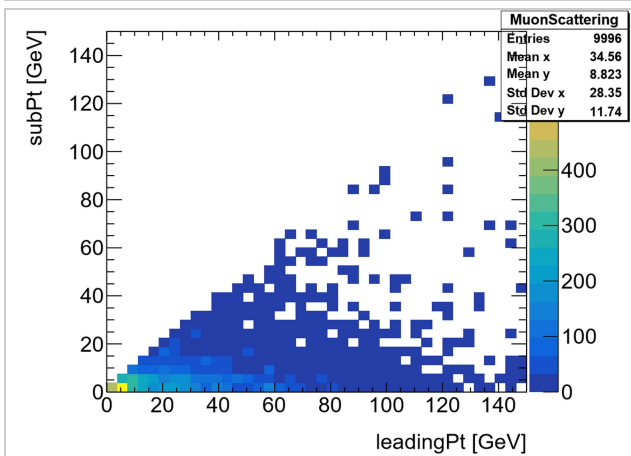
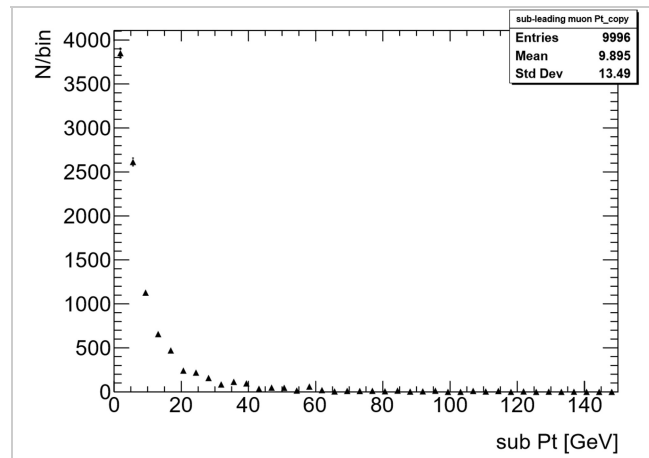
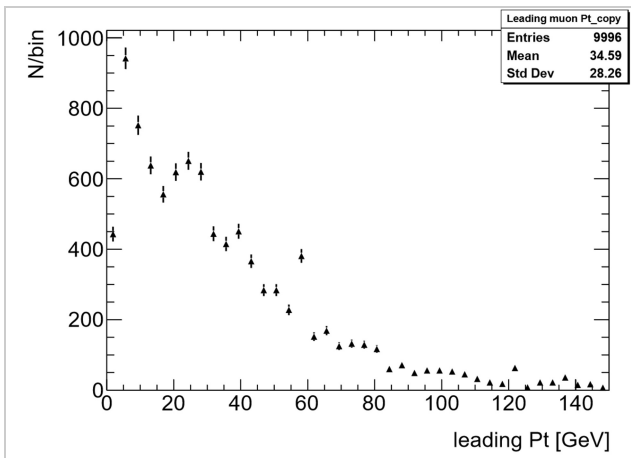
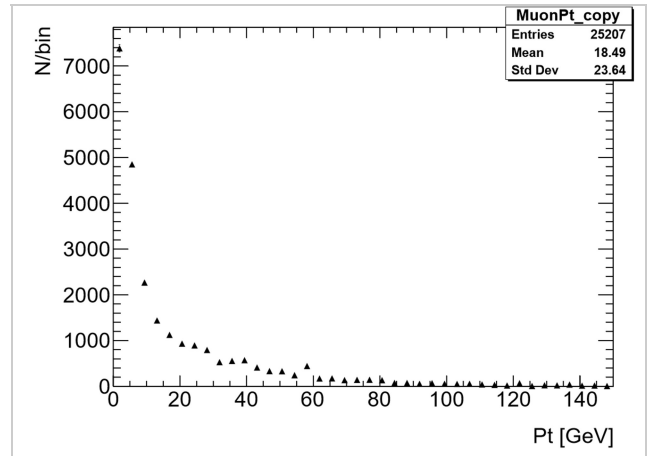
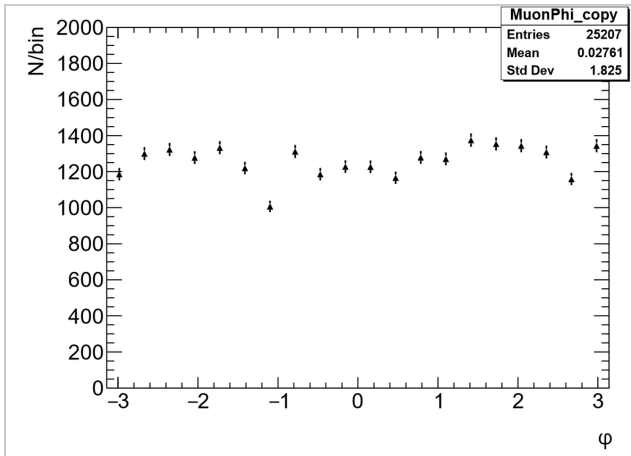
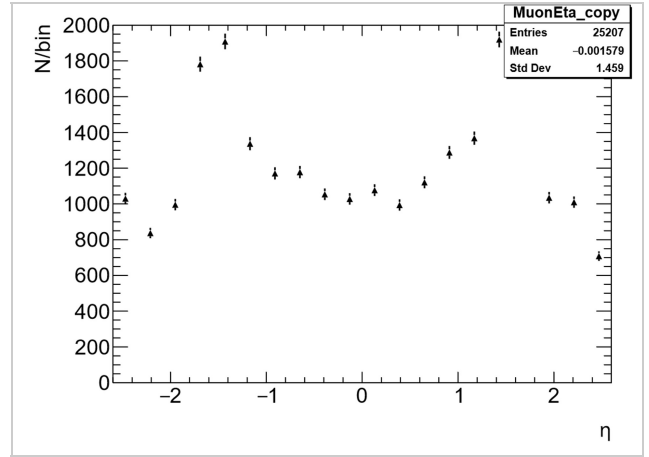
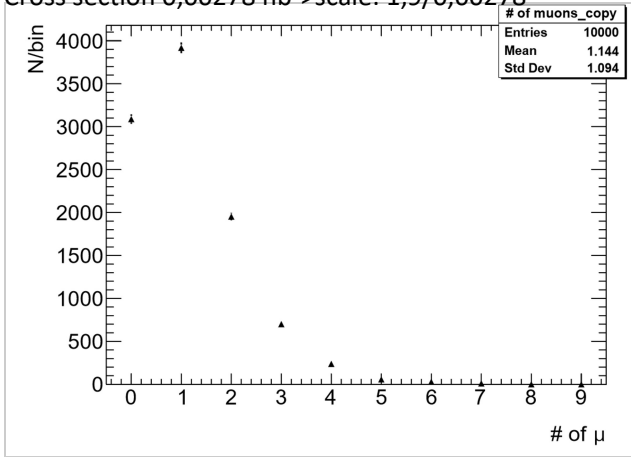
Diboson  
 WZlvvv

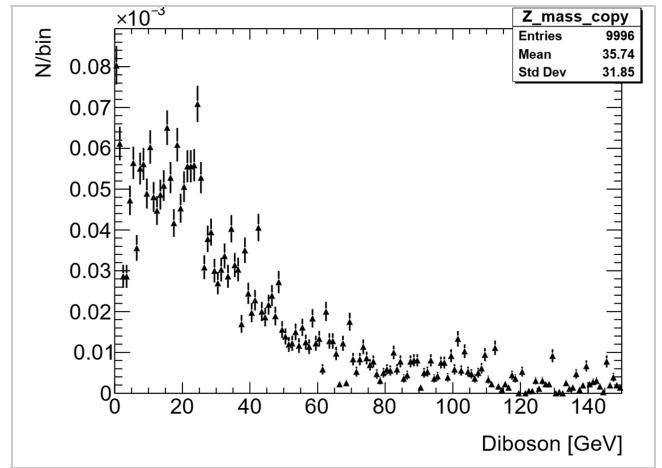
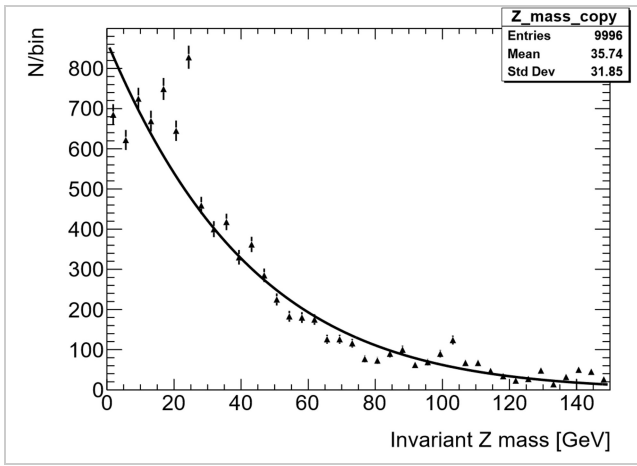
Cross section 0,00278 nb->scale: 1,9/0,00278



Diboson  
WZlvvv

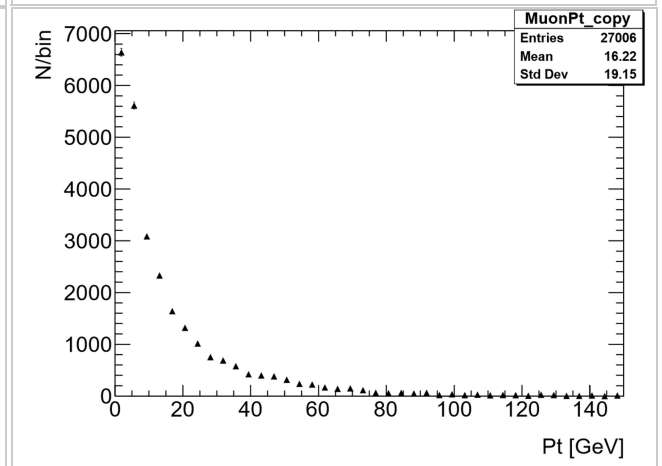
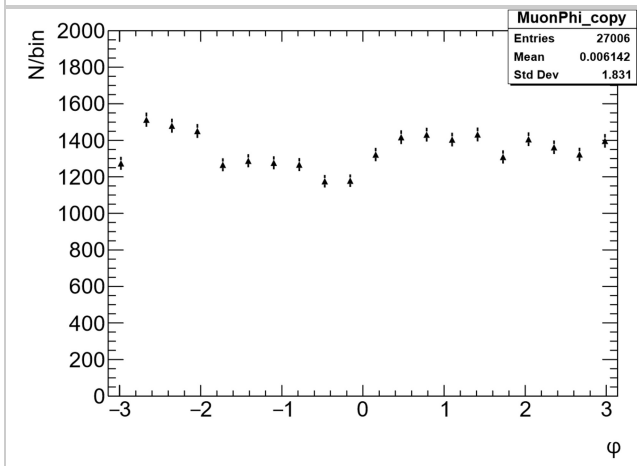
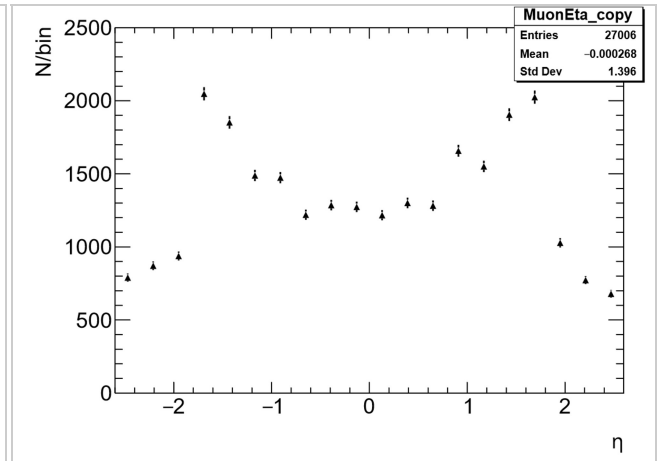
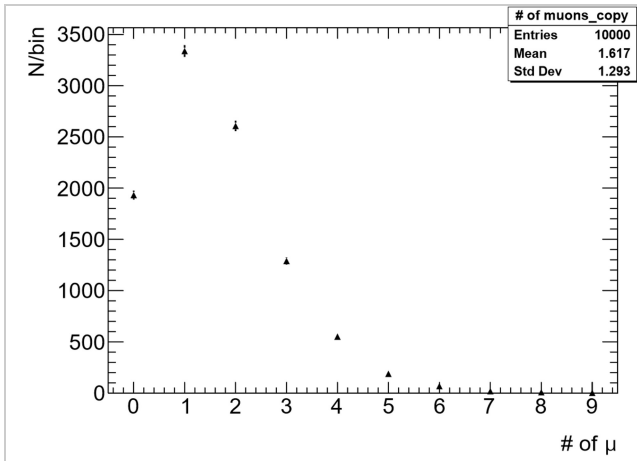
Cross section 0,00278 nb->scale: 1,9/0,00278

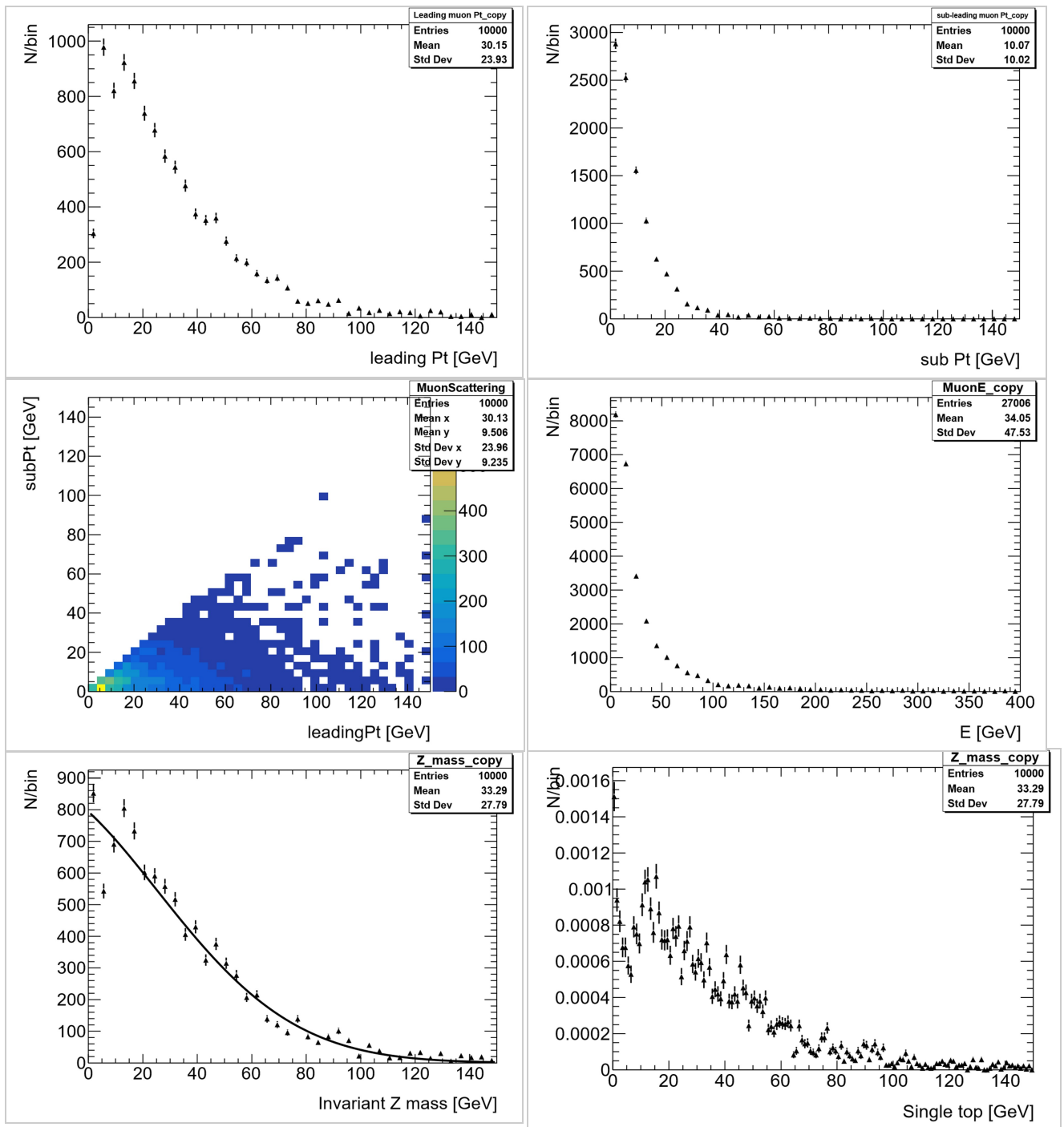




Single top

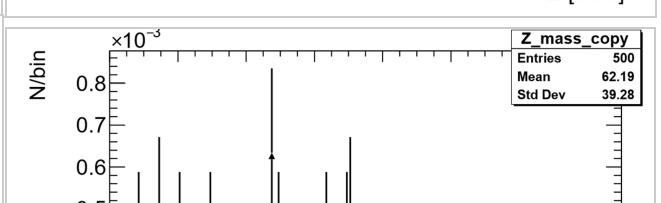
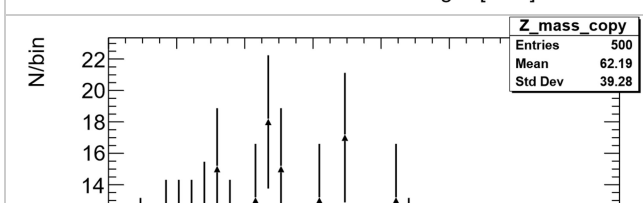
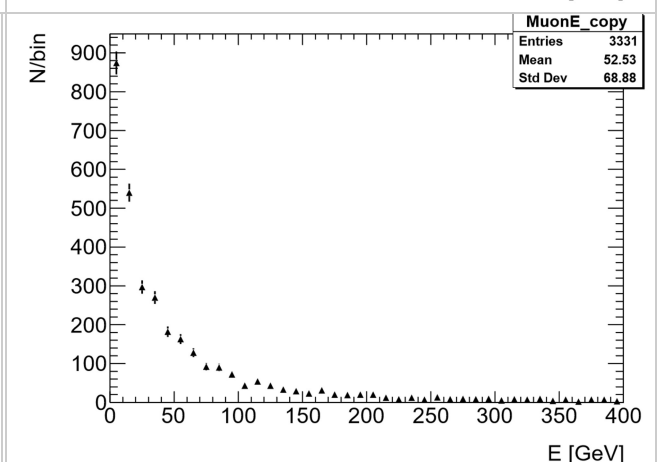
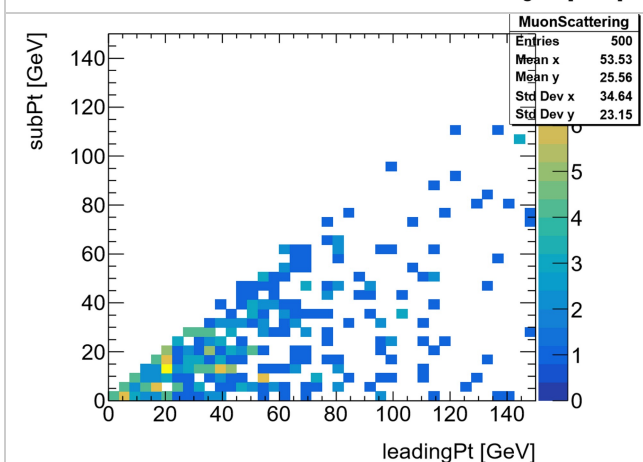
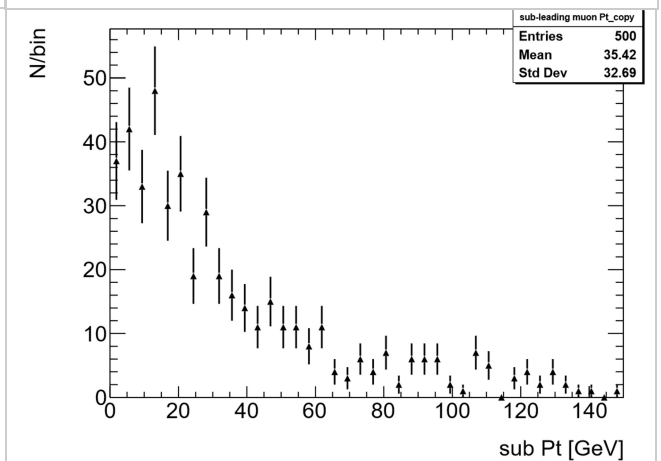
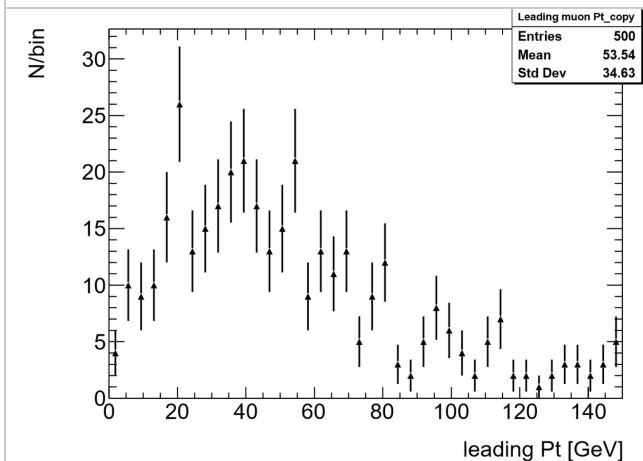
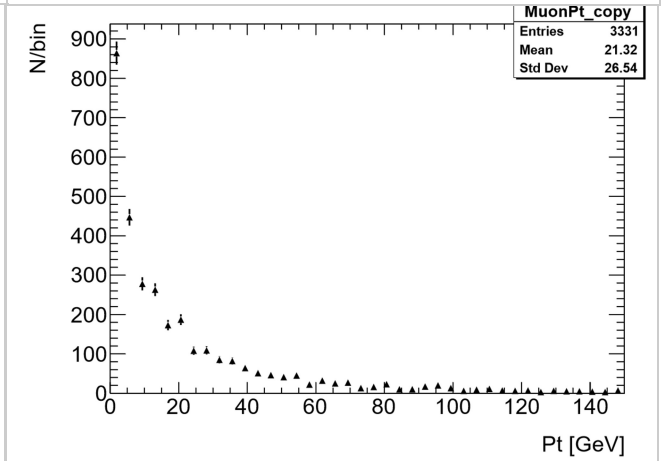
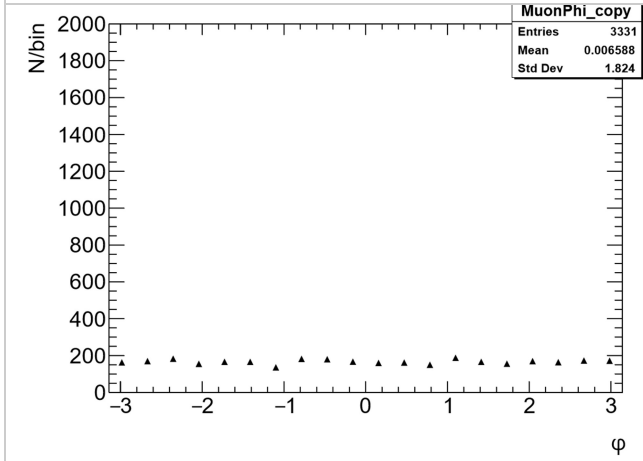
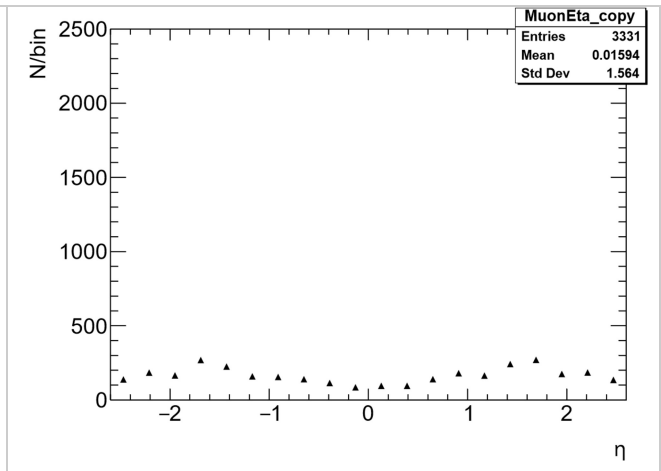
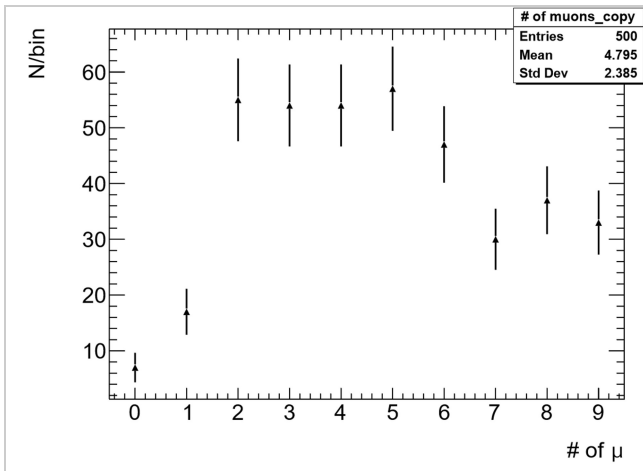
Cross section 0,0437 nb->scale: 1,9/0,0437

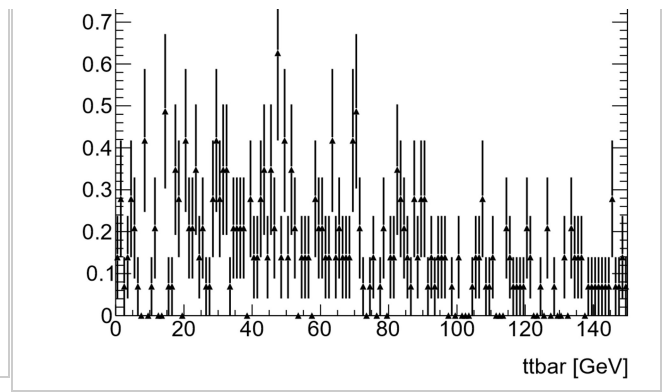
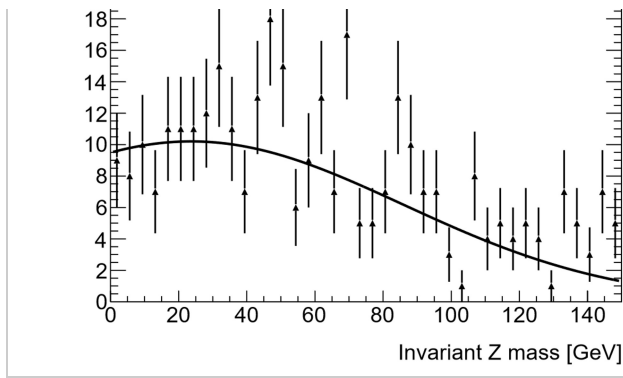




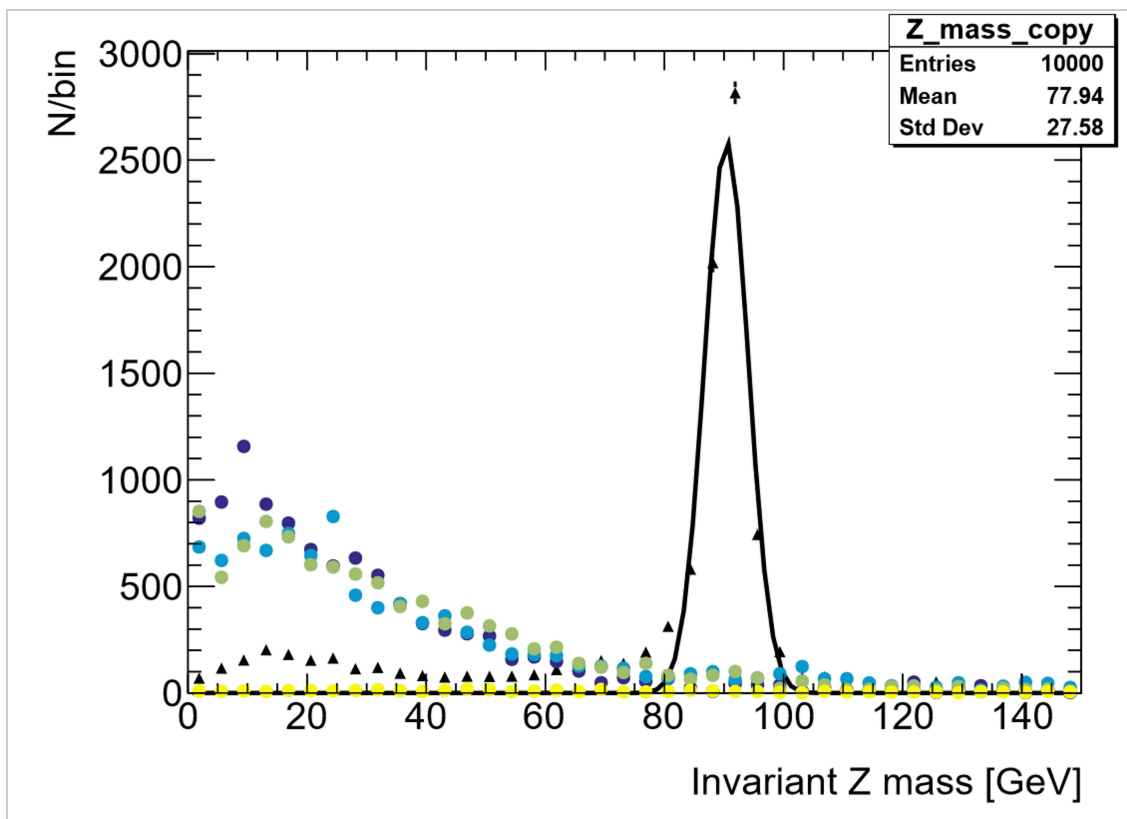
$Tt\bar{t}$

Cross section 0,696 nb  $\rightarrow$  scale: 1,9/0,696

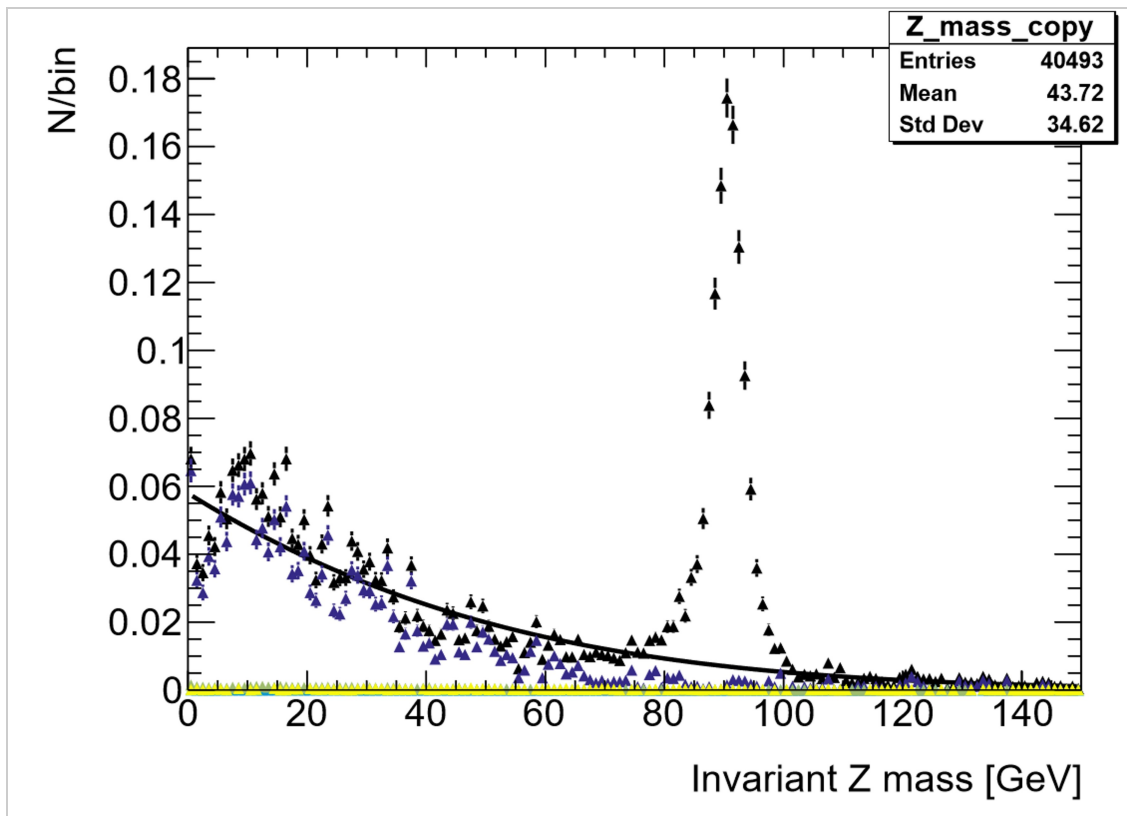




Combined:

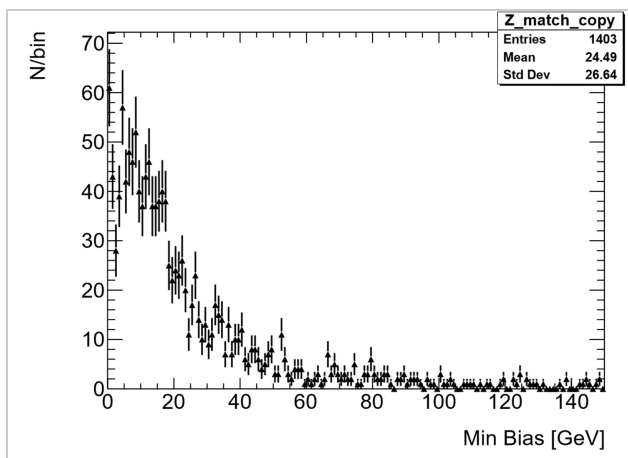


overlaid



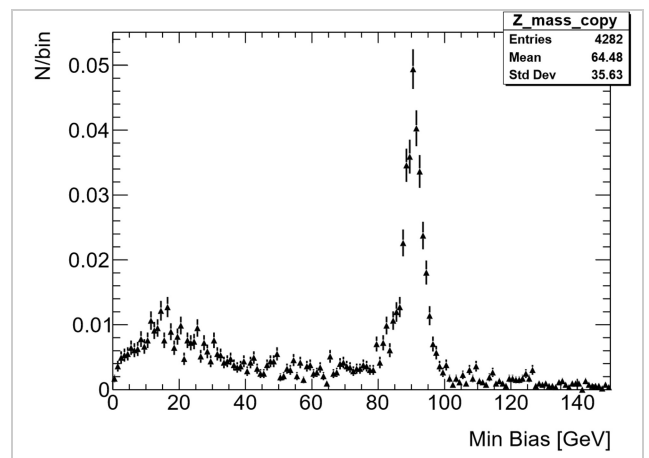
Scaled, normalized, added, overlaid

Min bias:

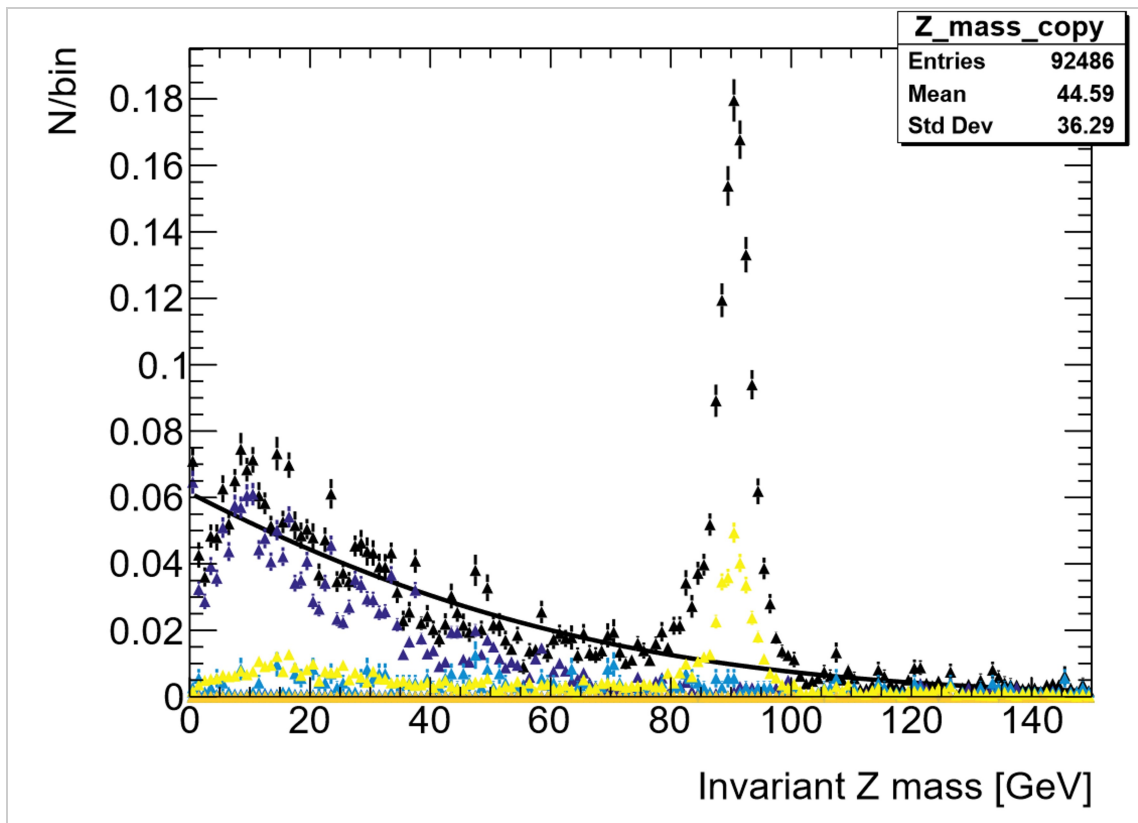


Truth matching

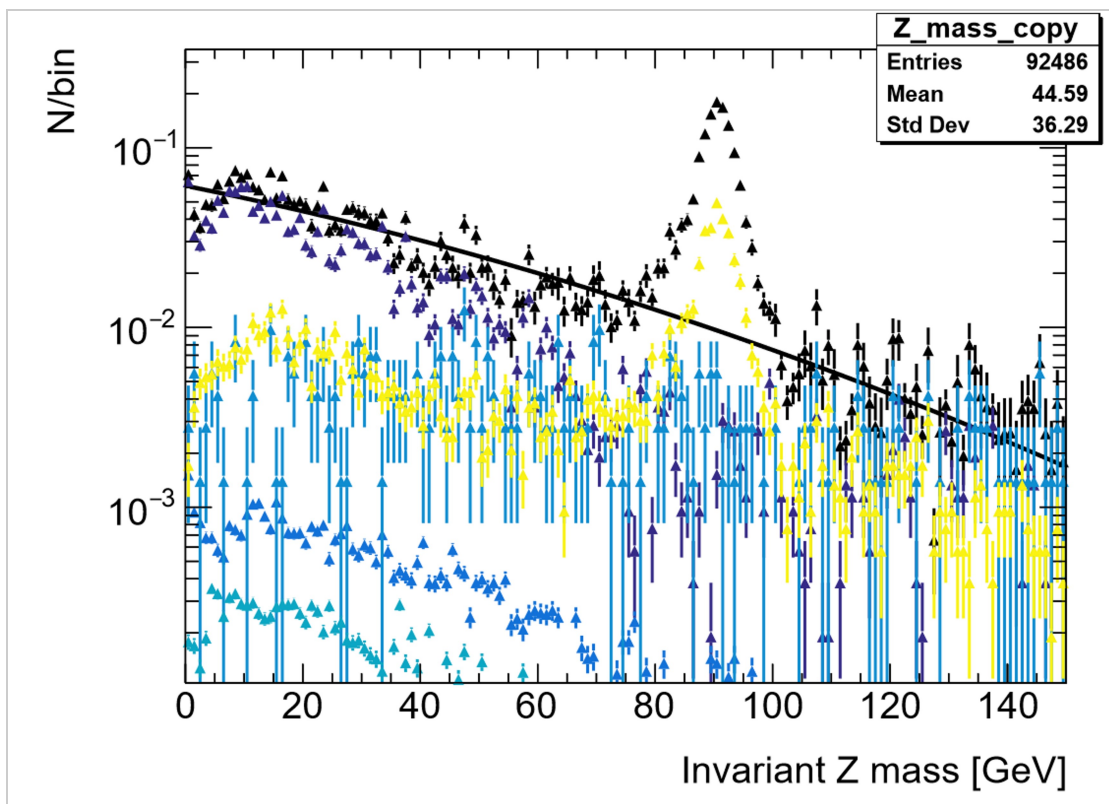
Two highest pt muons without truth link



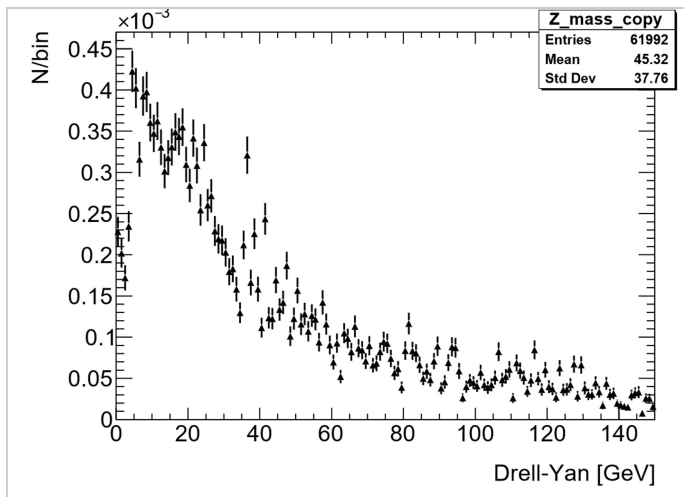
Reconstruction-truth match



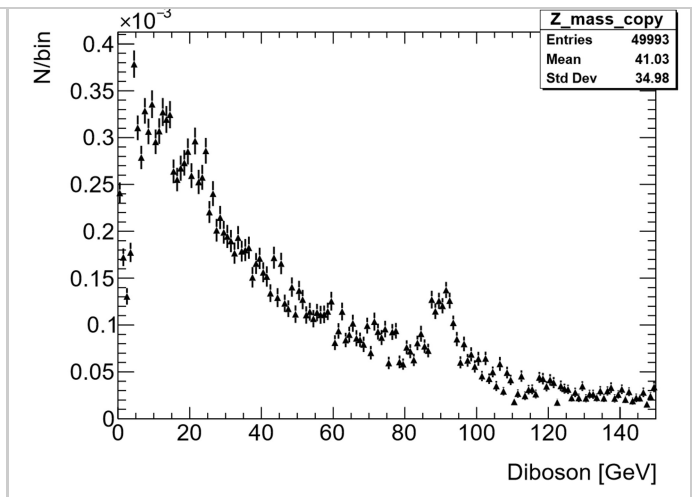
Min bias, Drell-Yan added  
 Signal = 1,32094  
 Background = 0,0960077  
 Significance = 1,1097



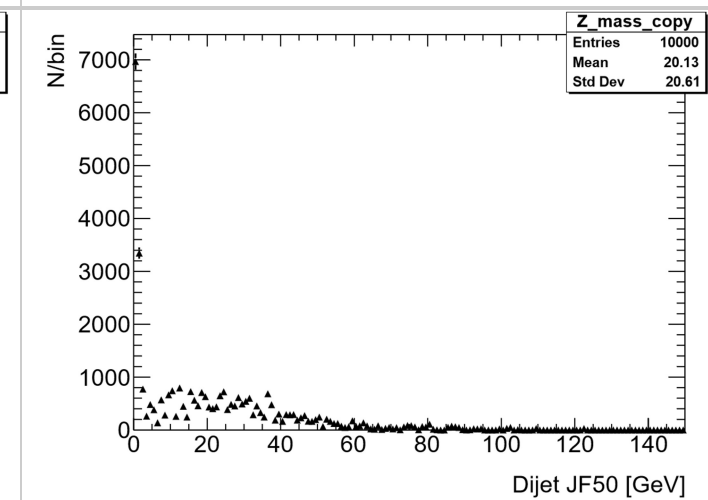
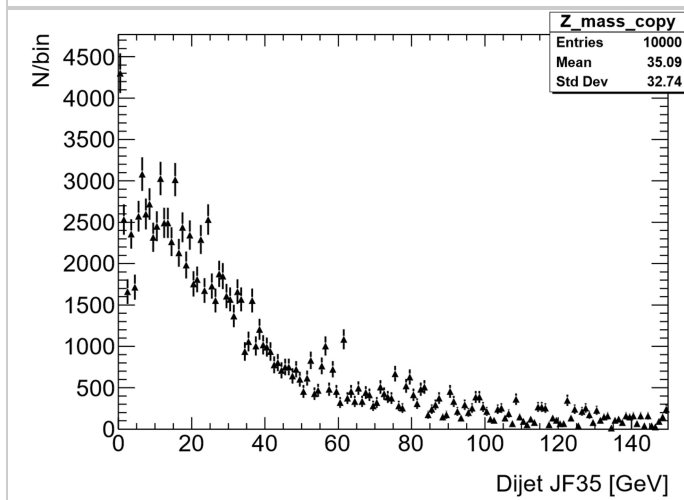
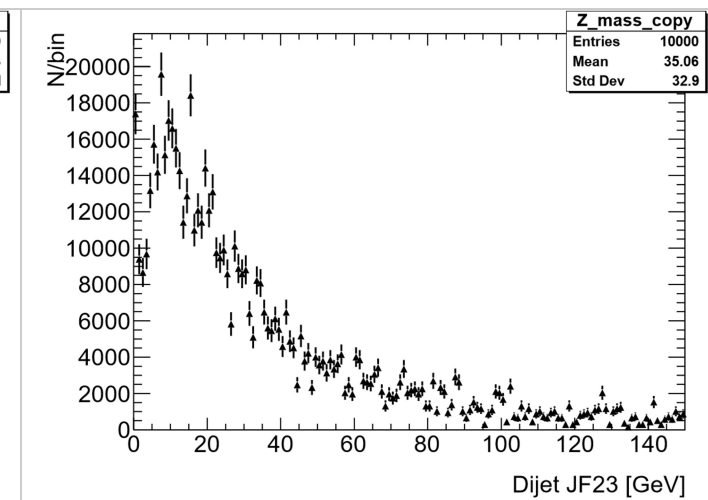
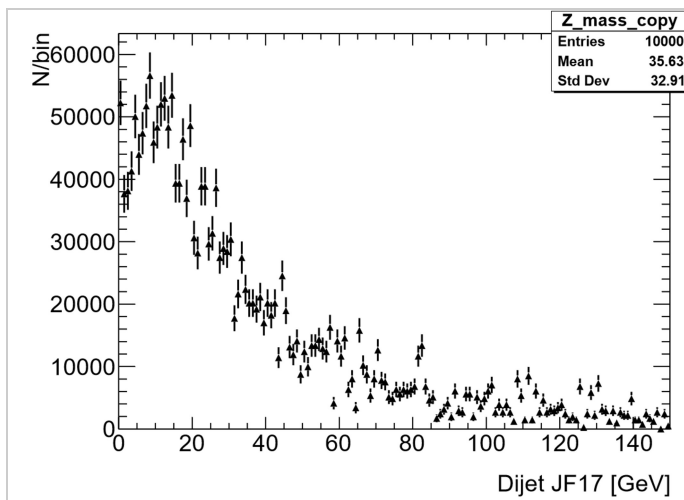
Log scale



Updated Drell Yan

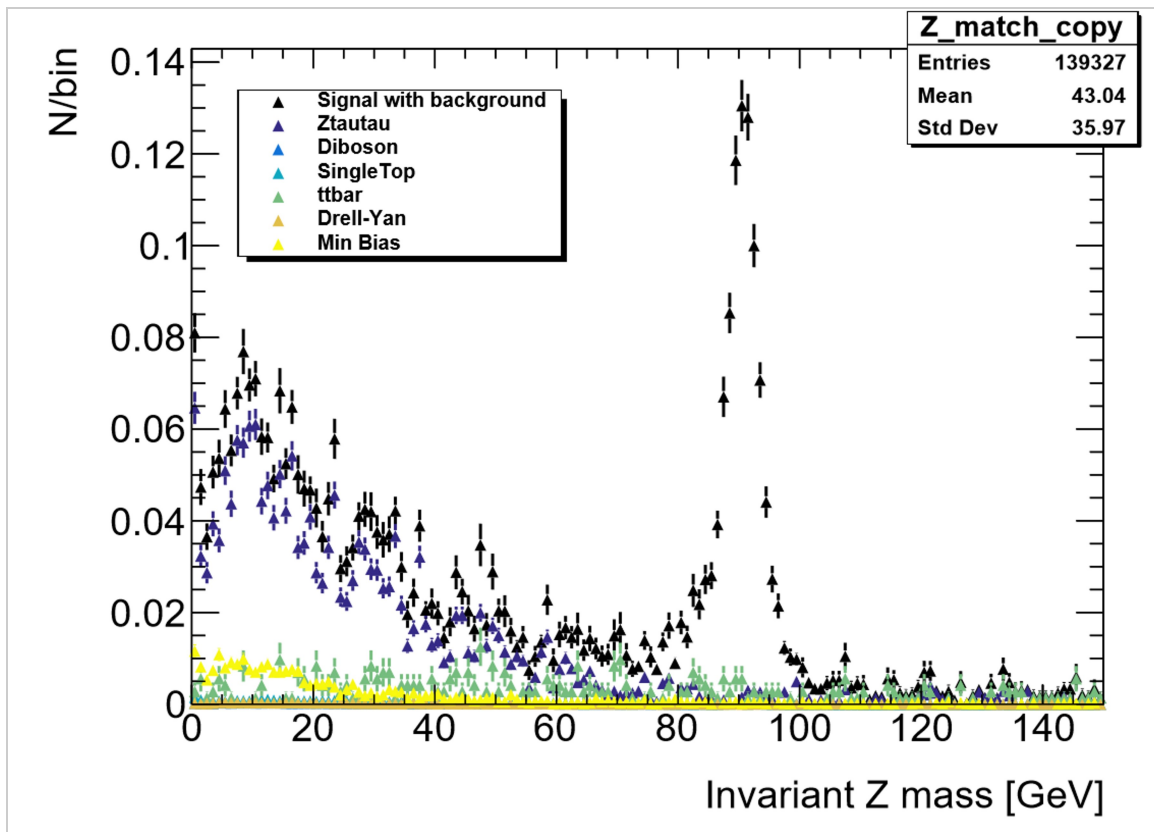


Updated Diboson



Dijet samples that include B and C decays





Signal: 0,981116  
 Background: 0,103316  
 Significance: 0,942148

